

REMARKS

I. Status of the Claims

Claims 2-22, 26-43, 46-56, 60-62, and 64-79 are rejected. Claims 1, 23-25, 44-45, 57-59, and 63 were previously cancelled. Claims 39 and 74 are hereby amended.

II. Rejection Under 35 U.S.C. § 101

In the Office action, the Examiner rejected claims 2-22, 26-43, and 78 “under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.” In the Office action, the Examiner stated that “a ‘computer implemented method’ is a process claim with defined structural and functional interrelationships and tied to a machine statutory class and therefore directed to statutory subject matter.” Non-final Office action ¶ 4, at p.2. Applicants amended the preamble of independent claim 39 to include the Examiner’s recommended language. Dependent claims 2-22, 26-38, 40-43, and 78 depend from independent claim 39. As a result, Applicants respectfully submit the amendment to independent claim 39 renders the rejection under 35 U.S.C. § 101 moot.

III. Rejections Under 35 U.S.C. § 112

In the Office action, the Examiner rejected claims 2-22, 26-43, 46-56, 60-62, and 64-79 “under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” Non-final Office action ¶¶ 6-7, p.2-3.

First, the Examiner stated that the language of claim 39, line 6 (“said first and second types of processing devices”) “lack[s] antecedent basis in the claims”. Applicants respectfully assert the amendment to claim 39, lines 6 and 9-10 renders the rejection moot.

Second, the Examiner stated that the language of claim 39, lines 5-7 and claim 74, lines 11-13 (“each of said one or more reservations express an amount of said first and second types of processing device in a normalized unit of processing capability”) is “unclear” as to “what is meant by ‘expresses an amount’ (i.e. an amount of processing capability to be reserved? an amount that the processing device is capable of processing?).” Applicants hereby amended independent claims 39 and 74 to state that the “one or more reservations ~~express~~ specifies an amount for use of said first and second types of processing device” similarly to the claims’ original language: “one or more reservations *specifies* a period of time *for use* of at least one computing resource”. (Emphasis added). As a result, Applicants respectfully submit the amendment to independent claims 39 and 74 renders the rejection moot.

Third, the Examiner stated that in claim 39, lines 8 and 9 (“a first type .. a second type of processing device”) “[i]t is unclear if these elements are the same as the processing device of line 6.” Applicants respectfully assert the amendment to claim 39, lines 6 and 9-10 renders the rejection moot.

Accordingly, Applicants respectfully submit that the above amendments to independent claims 39 and 74 render the rejection under 35 U.S.C. § 112, second paragraph, moot.

IV. Rejections Under 35 U.S.C. § 103(a)

The Examiner rejected claims 2-3, 22, 26-28, 35-36, 38-43, 46-47, 55-56, 60-62, 70-71, and 73-79 “under 35 U.S.C. 103(a) as being unpatentable over Rajkumar (US PG Pub No. US 2003/0061260 A1) [(“Rajkumar”)] in view of Buyya et al. (“A Case for Economy Grid Architecture for Service Oriented Grid Computing”, Parallel and Distributed Processing

Symposium, Proceedings 15th International 23-27, April 2001, pgs 776-790) [(“Buyya”)], in view of Ahamed et al. (US Pat No. 5,978,831) [(“Ahamed”)], further in view of Tayyar et al. (US Pat No. 7,194,741)” (‘Tayyar’). Non-final Office action ¶¶ 8-9, p.3-4.

The Examiner further rejected dependent claims 4-21, 39-34, 37, 48-54, 64-69, and 73 “under 35 U.S.C. 103(a) as being unpatentable over Rajkumar, ... Buyya, ... Ahamed, and Tayyar, ... further in view of Schweitzer et al. (US Pat No. 6,418,467”).

Applicants respectfully traverse these rejections.

A. Rajkumar

In the Office action, the Examiner stated that Rajkumar discloses “responsive to said amount of said unallocated computing resources being available, allocating said unallocated computing resources in accordance with said one or more requests ([0023] lines 8-9).” Non-final Office Action ¶ 10, at p. 5.

Paragraph [0023] lines 8-9 of Rajkumar state: “In addition, fixed-priority activities are also allocated for in this same system.” However, disclosing that “fixed-priority activities” are also generally allocated does not specifically disclose allocating “requests” in the way that aspects of the present systems or methods allocate “requests” and/or “reservations”. In paragraphs [0008] – [0009] of Rajkumar, the background section discloses “fixed priority scheme”:

[0008] Other operating systems such as VxWorks do allow for prioritization of tasks by an assigned priority level. *When multiple tasks are pending, the task having the highest priority is selected and granted access first. The highest priority task is then allowed to run until it completes or enters a wait state. Once the higher priority task has been completed or is entering an idle state, the resource is then made available to a lower priority task.*

[0009] *This fixed priority scheme*, while simple, also results in a number of difficulties.

(emphasis added). However, as stated in independent claims 39 and 74, “requests” are allocated based on “period of time for use” of resources and “corresponding ... monetary cost to a user” of the resources. As a result, Rajkumar at least does not disclose “responsive to said amount of said unallocated computing resources being available, allocating said unallocated computing resources in accordance with said one or more requests”.

Moreover, in the Office Action, the Examiner admits that several other aspects of independent claims 39 and 74 are not disclosed or suggested in Rajkumar. In particular, the Examiner stated that:

Rajkumar does not teach that each reservation and request has a corresponding monetary cost to a user, and charging the user the monetary cost for use of the computing resources.

* * *

Rajkumar also does not teach that said plurality of computing resources comprises: a first type of processing device having a first processing capability; and a second type of processing device having a second processing capability, wherein said first and second processing capabilities are different.

* * *

Rajkumar also does not teach that each of said one or more reservations expresses an amount of said first and second types of processing device in a normalized unit of processing capability.

Non-final Office action ¶¶ 12, 15, 17, at p. 6-7. Furthermore, the Examiner conceded that “Rajkumar does not explicitly teach the step of determining whether a sufficient amount of unallocated computing resources are available to fulfill all of said one or more requests”. Non-final Office action ¶ 11, at p. 5. However, the Examiner stated:

[I]t would have been obvious to one of ordinary skill in the art at the time of the invention to have included this limitation. Rakjumar’s method has the same end result of allocating resources to satisfy the requesting tasks as much as possible.

Furthermore, Rajkumar does not explicitly teach that the method is to be used on a distributed computer system. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a distributed computer in Rajkumar's invention. One would have been motivated by the desire to increase the throughput and scalability of Rajkumar's invention.

As stated in MPEP § 2141,

Office personnel fulfill the critical role of factfinder when resolving the Graham inquiries. It *must* be remembered that while the ultimate determination of obviousness is a legal conclusion, *the underlying Graham inquiries are factual*. When making an obviousness rejection, Office personnel *must* therefore ensure that the written record includes findings of fact concerning the *state of the art* and the teachings of the references applied. In certain circumstances, it may also be important to include explicit findings as to how a person of ordinary skill would have understood prior art teachings, or what a person of ordinary skill would have known or could have done. *Factual findings made by Office personnel are the necessary underpinnings to establish obviousness.*

* * *

Any obviousness rejection *should* include, either explicitly or implicitly in view of the prior art applied, an indication of the level of ordinary skill.

* * *

Office personnel *must* explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art.... The proper analysis is whether the claimed invention would have been obvious to one of ordinary skill in the art *after* consideration of *all* the facts.

(Emphasis added). Applicants respectfully contend that the Examiner did not satisfy his burden of establishing that the claimed elements of independent claims 39 and 74 (and the claims depending therefrom) – including “determining whether a sufficient amount of unallocated computing resources are available to fulfill all of said one or more requests” or using the method on “a distributed computer system” – are obvious to one of ordinary skill in the art at the time of the invention. The Examiner merely supplied Applicants with conclusory statements of obviousness and, therefore, the Examiner's rejection lacks the necessary factual foundation to meet his burden of establishing obviousness (as described in MPEP § 2141).

For at least each of the reasons described above, Applicants respectfully assert that Rakjumar, alone or in combination, does not disclose the elements claimed in independent claims 39 and 74. As a result, independent claims 39 and 74 and all claims depending therefrom are nonobvious and, therefore, patentable.

B. Buyya

In the Office action, the Examiner stated:

Buyya teaches a computational economy for use in a grid computing system that allows producers and consumers to negotiate costs for resources.... Buyya teaches multiple models where resource providers set a price through a posted price or bargaining model that is dynamic or static in nature.... Buyya teaches that such an economy results in resource providers obtaining the best possible return on their investment by maximizing their resource utilization and profit.... It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rajkumar to include Buyya's teachings in order to implement a computational economy. One would be motivated by the desire to increase revenue as a result of competition as described by Buyya.

Non-final Office action ¶¶ 13-14, at p. 6. However, Buyya at least does not disclose receiving one or more "reservations" and "requests" and allocating resources in the ways as described in independent claims 39 and 74. As a result, Applicants respectfully submit that Buyya, alone or in combination, does not disclose the claimed subject matter embodied in independent claims 39 and 74 and the claims depending therefrom.

C. Combination of Rajkumar, Buyya, Ahamed, and Tayyar

Although Applicants respectfully assert that the Examiner has not met his burden of identifying the claimed elements in the prior art (as traversed above), Applicants also submit that the Examiner has not provided adequate reasons to combine the four cited references.

As stated in MPEP § 2141:

The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made *explicit*. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness *cannot* be sustained by mere conclusory statements; instead, there must be some articulated *reasoning* with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396.

(emphasis added).

The Examiner's reasoning for combining Rajkumar with Buyya – i.e., motivation “by the desire to increase revenue as a result of competition” – does not adequately explain why one of ordinary skill in the art at the time of the present invention would think to combine a patent application directed to managing tasks run in an operating system (Rajkumar) with a publication concerning an economy *grid* architecture for *service oriented* grid computing (Buyya). In other words, the Examiner has not established why and how a “desire to increase revenue as a result of competition” would convince one of ordinary skill in the art at the time of the invention to combine Rakjumar with Buyya to achieve the claimed subject matter (without using impermissible hindsight). Moreover, as mentioned above, the Examiner has not fleshed out the factual inquiry leading to the identification of the background of the hypothetical person of ordinary skill in the art at the time of the invention. Furthermore, the Examiner has not identified the background of one of ordinary skill in the relevant art at the time of the invention. Accordingly, Applicants respectfully contend that the Examiner has not met his burden of establishing obviousness under MPEP § 2141 and, therefore, independent claims 39 and 74 (and the claims depending therefrom) are nonobvious.

In the Office action, the Examiner stated:

Ahamed teaches mixing and matching processors of different speeds in order to create a system with reduced cost (col 3 lines 3-21). It would have been obvious to one of ordinary skill in the art at the of the invention to have included a distributed computer system composed of processors of differing processing capabilities in order to reduce system costs.

* * *

It is old and well known to normalize values to simpl[if]y values such as indicated [in] Tayyar (col 3 lines 37-38, 52-56). Since the combination of Rajkumar and Ahamed results in a system having different processor sets with different capabilities, it would have been obvious to one of ordinary skill in the art to normalize the reservation values to simpl[if]y the combination of Rajkumar and Ahamed.

Non-final Office action ¶¶ 16, 18 at p.6-7. Here, the Examiner gives *no* reason why one of ordinary skill in the art would have reason to combine Ahamed with Rajkumar or any of the other cited references. The Examiner merely noted that “it would have been obvious to one of ordinary skill in the art at the time of the invention to have included a distributed computer system composed of differing processing capabilities in order to reduce system costs.”

Furthermore, Applicants respectfully assert that Examiner has not provided any express reasons why one of ordinary skill in the art would have thought to combine the cited references. Rather, the Examiner has provided what appears to be impermissible hindsight by merely stating A covers X and B covers Y, so it would have been obvious to combine A and B because one would want to implement X with Y. For example, the Examiner states that combining Rajkumar with Buyya would be obvious to one of ordinary skill in the art “in order to implement a computational economy”. Non-final Office action ¶ 14, p.6. However, the Examiner does not state *how* and *why* one of ordinary skill in the art (whom was not described) *at the time of the invention* would find it obvious to combine each of the specific four references cited by the Examiner in order to develop the claimed subject matter.

Moreover, there is no language or teachings within the cited references to give one of ordinary skill in the art any reason to combine those references. In other words, the statements the Examiner provides as purported reasons to combine the references, do not give reasons for one of ordinary skill in the art to read the references (at the time the invention was made) and develop the Applicants' solutions to the problems in the prior art as claimed herein. As a result, Applicants respectfully assert that Examiner's rejections under 35 U.S.C. § 103 should be withdrawn and independent claims 39 and 74 (and the claims depending therefrom) are nonobvious and allowable.

Accordingly, currently amended independent claims 39 and 74 (and all claims depending therefrom) are patentable over Rajkumar, Buyya, Ahamed, and/or Tayyar, alone or in combination. Furthermore, as the pending independent claims are patentable in view of Rakjumar, Buyya, Ahamed, and Tayyar, the pending dependent claims are patentable in further view of Schweitzer. Applicants thus request the rejections of these claims under 35 U.S.C. § 103 be withdrawn, and that the pending claims be allowed.

V. Conclusion and Request for Reconsideration

Applicants request reconsideration of the present application in view of the aforementioned amendment and remarks. Although other features of the claims in the present application are also significant, Applicants respectfully submit that the pending claims are allowable for at least the aforementioned reasons. Accordingly, Applicants respectfully request that the rejections under §§ 101, 112, second paragraph, and 103(a) be withdrawn, and that the pending claims be allowed.



Appl. No. 10/065,546
Amdt. Dated February 20, 2009
Reply to Office action of November 20, 2008
Express Mail Label No. EV 230979621 US

In the event that a telephone conference would advance examination of this application, the Examiner is invited to contact the undersigned at the number provided.

VI. Authorization

The shortened statutory period for response expires on February 20, 2009; therefore, the present response is timely submitted and does not require petition and payment of necessary extension fees. In the event the Commissioner determines that an additional fee is due for this paper, the undersigned hereby petitions for any required extension of time and authorizes the Commissioner to charge any fee required to Milbank's deposit account no. 13-3250, order no. 36287-03400. A DUPLICATE COPY OF THIS PAGE IS ENCLOSED HEREWITH.

Respectfully submitted,
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February 20, 2009

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